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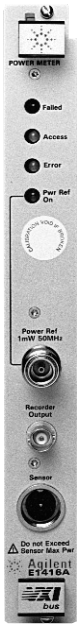
Agilent E1416A
Power Meter

Data Sheet

- 1-Slot, C-size, message based
- Single channel
- ± 0.02 dB or ± 0.5% instrumentation accuracy
- 100 kHz to 110 GHz, sensor dependent
- –70 to +44 dBm
- 1 mW power reference



Agilent E1416A

Description

The Agilent Technologies E1416A Power Meter is a **C-size, 1-slot, message-based VXI module.** It is a high-performance, single-channel, programmable, average power meter compatible with the Agilent 8480 family of thermocouple and diode power sensors.

This power meter makes accurate and reliable average power measurements. With its powerful programming capability, exceptional accuracy and reliability, it lets you measure your test signal with speed, precision, and confidence!

Refer to the Agilent Technologies Website for instrument driver availability and downloading instructions, as well as for recent product updates, if applicable.

Agilent Technologies

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Product Specifications

Characteristics

Frequency:	Allows entry of test signal frequency for cal factor selection
Offset:	Allows measurement to be offset by ± 99.99 dB
Resolution:	Selection of 0.1, 0.01, and 0.001 dB. Auto Filter Mode automatically selects the required number of averages for the chosen range and resolution
Averaging:	Selectable from 1 to 1024 readings *(in powers of 2)*
Duty cycle:	Displays peak power representation of measured RMS power for rectangular pulses
Sensor tables:	Allows entry and storage of up to 10 sensor cal factor tables versus frequency
Save/recall states:	Saves and recalls 10 complete E1416A operating states

General

Frequency:	100 kHz to 110 GHz sensor dependent
Power range:	–70 to + 44 dBm *(100 pW to 25 W),* sensor dependent
Dynamic range:	50 dB in 10 dB ranges
Results units:	W, dBm *(absolute),* %, dB *relative*
Accuracy:	± 0.02 dB or ± 0.5% (instrument, absolute mode). In ranges of 4 or 5, add sensor linearity percentage
Zero set:	± 0.5% of full scale on most sensitive range. Divide by 10 for each higher range, ± 1 count
Power reference:	1.00 mW *(50 MHz oscillator factory set to ± 0.7% traceable to NIST)*

Functions

Power:	Yes
Offset:	Yes
Averaging:	Yes
Duty cycle:	Yes

General Specifications

VXI Characteristics

VXI device type:	Message based
Size:	C
Slots:	1
Connectors:	P1/2
Shared memory:	n/a
VXI buses:	n/a

Instrument Drivers - See the Agilent Technologies Website (http://www.agilent.com/find/inst_drivers) for driver availability and downloading.

Command module firmware:	n/a
Command module firmware rev:	n/a
I-SCPI Win 3.1:	n/a
I-SCPI Series 700:	n/a
C-SCPI LynxOS:	n/a
C-SCPI Series 700:	n/a
Panel Drivers:	Yes
VXI*plug&play* Win Framework:	Yes
VXI*plug&play* Win 95/NT Framework:	Yes
VXI*plug&play* HP-UX Framework:	No

Module Current

	I_{PM}	I_{DM}
+5 V:	1	0.1
+12 V:	0	0
–12 V:	0	0
+24 V:	0.1	0.01
–24 V:	0.1	0.01
–5.2 V	0	0
–2 V:	0	0

Cooling/Slot

Watts/slot:	12.20
ΔP mm H_2O:	1.00
Air Flow liter/s:	0.20

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Ordering Information

Description	Product No.
Power Meter, C-Size VXI	E1416A
Delete Cable	E1416A 004
Service Support Kit	E1416A 915
Additional User Manual	E1416A 916
3 Yr. Retn. to Agilent to 1 Yr. OnSite Warr.	E1416A W01
5-ft (1.5 m) Power Sensor Cable	11730A
10-ft (3.0 m) Power Sensor Cable	11730B
20-ft (6.1 m) Power Sensor Cable	11730C
50-ft (15.2 m) Power Sensor Cable	11730D
100-ft (30.5 m) Power Sensor Cable	11730E
200-ft (61.0 m) Power Sensor Cable	11730F
High-power Thermocouple Power Sensor	8481B
Mil Std 45662A Calibration Certification	8481B 1BN
Extra Manual Set	8481B 910
High-power Sensor, 100 kHz to 4.2 GHz	8482B
Mil Std 45662A Calibration Certification	8482B 1BN
3-watt Power Sensor, 10 MHz to 18 GHz	8481H
Mil Std 45662A Calibration Certification	8481H 1BN
Extra Manual Set	8481H 910
3-watt Power Sensor, 100 kHz to 4.2 GHz	8482H
Mil Std 45662A Calibration Certification	8482H 1BN
Extra Manual Set	8482H 910
Power Sensor, 50 MHz to 26.5 GHz	8485A
Specified Performance for 0.05-33 GHz	8485A 033
Mil Std 45662A Calibration Certification	8485A 1BN
Extra Manual Set	8485A 910
Power Sensor, 10 MHz to 18 GHz	8481A
APC-7 Connector	8481A 001
Japanese Operating Manual	8481A 030
Mil Std 45662A Calibration Certification	8481A 1BN
Extra Manual Set	8481A 910
Power Sensor, 100 kHz to 4.2 GHz	8482A
Japanese Operating Manual	8482A 030
Mil Std 45662A Calibration Certification	8482A 1BN
Extra Manual Set	8482A 910
75-ohm Power Sensor, 100 kHz to 2 GHz	8483A
Japanese Operating Manual	8483A 030
Mil Std 45662A Calibration Certification	8483A 1BN
Extra Manual Set	8483A 910
Power Sensor, 26.5-40 GHz	R8486A
Power Sensor, 33-50 GHz	Q8486A
Power Sensor, 50 MHz to 50 GHz	8487A
V-band Power Sensor, 50 GHz to 75 GHz	V8486A
W-band Power Sensor	W8486A
Diode Power Sensor, 10 MHz to 18 GHz	8481D
Mil Std 45662A Calibration Certification	8481D 1BN
Extra Manual	8481D 910
High-sensitivity Diode Power Sensor	8485D
Specified Performance for 0.05-33 GHz	8485D 033
Mil Std 45662A Calibration Certification	8485D 1BN
Extra Manual	8485D 910
Diode Power Sensor, 50 MHz to 50 GHz	8487D
Waveguide Power Sensor, 26.5-40 GHz	R8486D
Waveguide Power Sensor, 33-50 GHz	Q8486D

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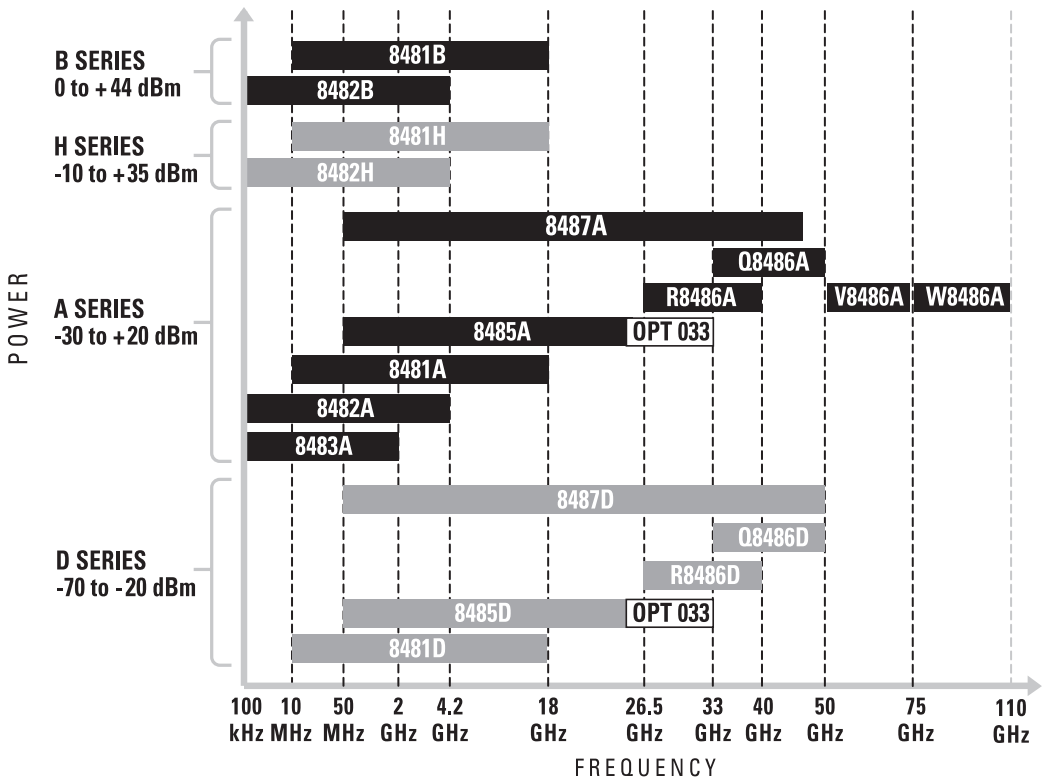

The E1416A is functionally equivalent to the Agilent 437B[1] or 70100A. It is compatible with all 8480 series sensors (and 11722A) as shown here.

[1]The Agilent 437B has been obsoleted and replaced by the E4418B.

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